

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Li Li

Serial No.: 09/645,903

Filed: August 25, 2000

For: METHODS FOR FABRICATING
RESIDUE-FREE CONTACT OPENINGS
(as amended)

Confirmation No.: 6825

Examiner: M. Such

Group Art Unit: 2891

Attorney Docket No.: 2269-3361.2US
(1997-0663.02/US)

VIA ELECTRONIC FILING
November 18, 2008

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Mail Stop Issue Fee
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is filed in response to the Notice of Allowance mailed August 25, 2008 and sets forth Applicant's comments, pursuant to 37 C.F.R. §1.104(e), on the Examiner's Statement of Allowable Subject Matter accompanying the Notice of Allowance.

In the Notice of Allowance, the Examiner indicates:

Regarding claims 10-20, a search of the prior art does not disclose or reasonably suggest a method of applying a solution consisting essentially of nitric acid to an opening extending through a dielectric layer and an exposed metal-containing layer without substantially removing the metal-containing layer followed by a phosphoric acid dip in the context of the entire claim.

Regarding claims 21-28, a search of the prior art does not disclose or reasonably suggest a method of cleaning a partial via in a dielectric layer having an exposed barrier layer with a phosphoric acid-containing solution including a fluorine-containing component followed by etching the barrier layer after the cleaning defining a bottom surface by a metal-containing trace and applying a nitric acid-containing solution in the context of the entire claim.

Regarding claims 35-37, a search of the prior art does not disclose or reasonably suggest a method of removing at least a portion of a dielectric layer through a mask, forming an oxide polymer on the resulting opening, removing a barrier layer and a metal-containing layer, exposing the opening to a nitric acid containing solution, substantially removing any metal polymer layer present, without substantially removing the metal-containing layer exposing the opening to phosphoric acid containing solution and removing the oxide polymer layer in the context of the entire claim.

Applicant concurs with the reasons as stated by the Examiner insofar as they comprise a summary, which is exemplary and not limiting. However, the scope of the claims is based on the actual language of the claims and equivalents thereof, and not on a paraphrase or summary of the claim language.

The Independent claims as allowed recite features and methodology in addition to, and in different language than, those described in the Statement of Allowable Subject Matter. Furthermore, the dependent claims recite elements in addition to those of the independent claims, which are also not reflected in the Statement of Allowable Subject Matter. Such additional elements, in combination with those of the independent claims from which each claim depends, provide additional reasons for patentability. Accordingly, the scope of the claims must be determined from the literal language of each as a whole, as well as all equivalents thereof.

Therefore, to the extent that the Examiner's reasons for allowance as stated are not relevant to, or wholly encompassing of, a particular claim, independent or dependent, Applicant assumes that (pursuant to 37 C.F.R. §1.104(e)) the Examiner has determined that the record of the prosecution as a whole of the application makes clear the reasons for allowing those claims. Further, it appears, pursuant to M.P.E.P. 1302.14, that the Examiner's Statements of Allowable Subject Matter are not intended to encompass all of the reasons for allowance.

Respectfully submitted,



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